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FRIDAY, JULY 15, 1904.

☞ The Times-Dispatch takes the full Associated Press Service, the London Times War Service and the Hearst News General News Service and has its own correspondents throughout Virginia and North Carolina and in the leading cities of the country.

If you go to the mountains, seashore or country, have The Times-Dispatch go with you.

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Virginia Exhibits at St. Louis.

We have already referred to the Virginia exhibits at St. Louis, but we have to add that all Virginians who have visited the St. Louis Exposition and have taken the trouble to visit the exhibits of their own State, must have been greatly gratified by the display which has been made of the products of the Old Dominion.

With only $50,000 to meet all expenses, the Virginia commissioners have made exhibits which compare favorably with those of States that have spent over ten times as much. There are four separate special exhibits. The horticultural, where the apples of Virginia are shown in great profusion, variety and excellence, is one of the handsomest, if not the handsomest exhibit of the kind in the great horticultural hall, and was given the place of honor and conspicuousness next to Missouri's.

The agricultural exhibit would be a delightful surprise to any one. In variety and character it was not surpassed. It was quite novel to see Virginia figuring as the great peanut State, and along side of it, cotton, tobacco, wheat and corn of the highest perfection. The writer had to go to St. Louis to learn that there were nearly thirty cotton oil mills in the State of Virginia, and that the cotton of this State was especially sought for by the manufacturers of certain fine articles.

The commissioners have shown excellent taste in having large colored transparent photographs made of the fields, flocks and herds of the various sections of the State. One of the most remarkable exhibits on the whole ground was the oyster display of Virginia. With great art the commissioners had fashioned in absolute fac simile a large number of specimens of the finest Virginia oysters. Nothing like them had ever been seen by tens of thousands of people, who had been accustomed only to the canned article of the western cities. These oysters were made of wax, and were the exact reproduction of the identical oyster taken from the shell, in which it was shown, and, as mere works of art, were well worth seeing. In the same section were shown the wild fowls and animals of Virginia and specimens of its forest timber.

There, too, was a wonderful display of the Richmond Cedar Works, which is properly characterized as the greatest manufactory of wooden ware in the world.

In the transportation building there is placed at the head of a long line of engines an enormous freight locomotive recently built for the Chesapeake and Ohio Railroad by the Richmond Locomotive Works.

Among the other very attractive and striking exhibits by the State was one by the Charlottesville woolen mills, whose cloths were shown not only in the department of manufactures, but in the exhibit of the United States government, as the cadets at West Point are clothed in the cloth of that company.

In the department of mines and metalurgy the Virginia exhibits were most admirable, especially in coal, coke, slate, building stones and iron ore. The whole was gotten up with great skill, and was an instructive lesson to the most of the Virginians themselves of the great resources of their State.

The Virginia State building, which has been constructed as almost a fac simile of Monticello, is all that one could wish to represent the historical character and refinement of the State. The antique furniture which was so kindly lent by Mrs. Harbaugh, of this city, exactly suits the character of building, and gives an air of elegance and antiquity to the whole, which fitly illustrates the character of the best of the old Virginia homesteads.

Altogether Virginia has made the best and most characteristic display of her resources of the forest, field, mine and factory that she has ever done, and the greatest credit is due to those energetic members of her commission, who have accomplished so much to set the resources of the State properly before the world.

The Death of Kruger.

Stephen John Paul Kruger, who was affectionately known by his fellow citizens as Oom Paul, was born in Rastenburg, Cape Colony, October 10, 1825. In his early days he was a great fighter of lions and Zulus, and in 1872 he was made a member of the Executive Council of the Transvaal. Later, he became a general in the army, and was in command of the forces which gave the British their memorable defeat on February 27, 1881, at Majuba Hill. In 1883 he was chosen president of the republic, and was elected continuously thereafter until the republic fell in its war with England. When Kruger first visited Germany he met Prince Bismarck, who said that he was the finest natural diplomat he had ever known, and in the negotiations with Joseph Chamberlain just before the final declaration of war by the Transvaal, Kruger showed a masterly knowledge of diplomacy. On October 19, 1900, he was compelled to leave Pretoria to avoid capture by Lord Roberts. On this occasion it was wittily said that as the government of the Transvaal was being moved around on Mr. Kruger's private car, it was "vox et Pretoria nihil." On November 22d, Mr. Kruger landed in France, whither he had sailed from Lorenzo Marcus on the Dutch man-of-war Gelderland. He was welcomed by the authorities of Paris and vote of sympathy offered his people. Mr. Kruger had intended going to Berlin, though he disclaimed all political motives, but he was informed by the government that his presence would not be acceptable. He, therefore, went to Holland, where he was received with delirious joy by the Dutch and cordially welcomed by the government. After his departure from South Africa, the war was waged by the generals in the field. Mr. Kruger was one of the last of that type of provincials whose force consisted in a certain shrewdness combined with utter inability to see any side of the question save that which he desired to see. It was this very characteristic that led him and his hardy fellow-men to make their almost unexampled defense of the Transvaal, and thereby to expose the undreamed of weakness and incapacity of the British army. President Kruger was narrow, but he was an unyielding, patriot, and no one can doubt his gallantry or his courage or his conviction that he was fighting for God-given rights.

Ben the Safe, Tillman the Sane.

No one was more surprised than Benjamin R. Tillman himself, when he suddenly discovered that he was playing with great success the role of peacemaker between the two wings of the Democratic party. He said of himself, "I am almost becoming safe and sane," and then remembering how bitterly he had fought that quality of government in the past, he added as an after-thought, "How I hate that word!" All the same, Mr. Tillman recognized the handwriting on the wall, though he has not been noted for his astrological researches in the past. He saw that the times had changed; that the needs of the South were safety and sanity; that the needs of our people are better served by savings banks, in which to store the proceeds of their cotton crops, and by confidence in existing conditions which will build up manufactories than by discussions of theories which have been proved to be unsound. At any rate Senator Tillman, whether these were his reasons or not, took a notable part in harmonizing the party at St. Louis by using his strength and personality for what he saw to be the best interests to us all. Senator Tillman has not been much of a harmonizer in the past, but he has showed the same force and intelligence in this new departure that characterized him in his sucessful fights from obscurity to a position of commanding prominence. Such general cooperation as that between August Belmont and Benjamin R. Tillman indicates a solidarity and a strength in the party that is not yet properly appreciated by the public at large. It will be better understood, however, the day after election.

"Golden Rule Jones."

When death selected Samuel M. Jones, the so-called eccentric Mayor of Toledo, O., for its victim the other day, it reached for a shining mark. In many respects Mr. Jones was a remarkable man. Shafts of ridicule had been aimed at him for a long time, and the only noticeable result was to give him a name, "Golden Rule Jones," that was much to his credit.

He modestly claimed to do business on the principles inculcated by the Golden Rule, and his hundreds of employes testify that he made good his claim. None of the thousands of people with whom he did business in other ways have ever offered to dispute the justice of the claim.

Mr. Jones tried to introduce the same principles in politics and carry them out in municipal government. It is no reflection upon him, but rather it is to the discredit of the people he tried to serve; that in this latter experiment he was only partially successful.

In all of his efforts to make those about him, and all the world, for that matter, better off, he was honest, sincere and earnest and those efforts stamped him an unusual man in his day and generation. At all times during his remarkable career he had the confidence and respect, but not always the cordial support of his fellow-citizens. More earnest support would perhaps have enabled him to accomplish the good he sought for his fellowmen. His individuality was pronounced, and his application of the Golden Rule was with him a fixed principle; he lived it throughout his life.

From time immemorial men have been nicknamed by their friends and followers. Take for example, "Mad" Anthony Wayne in Revolutionary times; "Stonewall" Jackson, among our own illustrious dead. Think what a tale of unreasoning obedience is told by the "Me Too" nickname for Senator Platt, of New York. In our own political life we have had "Extra Billy" Smith and our own "Lame Lion of Lynchburg." There is much in a nickname that long biographical sketches would not tell; and among all of the great men of our nation, the grand old men of our States, the Mayors of our cities and the party leaders of the precincts and wards the first to take the eternal nickname of the Golden Rule was Samuel N. Jones. He was laughed at, but his great leader and master was crucified. He was misunderstood, but so were the early martyrs, and he could stand that. Like many another "eccentric follower of some wild idea," Samuel M. Jones has wrought for himself an enduring monument that future people will behold with veneration and affection. Out of all the politicians in all the world, he was the first to adopt as his principle and practice, in season and out of season, the Golden Rule, and he gained his reward in the love of his fellowmen and the consciousness of having done his best to "be kindly affectioned one to another, in honor preferring one another" right here in this world. A man with such ideals and such vigor in carrying them out comes mighty close to tasting heaven without having to die.

The Baltic.

With every berth in her first and second cabins taken, and with her present steerage capacity taxed to its utmost, the big Baltic, of the White Star Line, sailed Wednesday on her first eastern voyage. The Baltic is the largest ship now afloat, and carried 1,826 persons, a good sized town, but that was hardly half, for she can carry 3,000, not including a crew of 350. The Baltic is 726 feet long, and has 40,000 tons displacement, and a cargo capacity of 28,000 tons. Though such an enormous ship, the Baltic burns less than one-half as much coal a day as the Deutchland, her great competitor. The reason is that the 250 tons used by the Baltic takes her across in eight days, which is just as fast as the public wants to go. Indeed, anybody who has traveled on a very fast ocean liner would never desire to go through the fearful vibration, which is a necessary incident to great speed on the ocean, unless it was absolutely necessary. The continual increase in the size and comforts of the ocean liners is a comment on the trend of the public's wishes. The Baltic has four decks, which are useful for promenading or enjoying the air. There is every possible convenience for rest, comfort and peace. Instead of sleeping in a cuddy hole, those who can pay for it can have row after row of cabins containing bed-room, sitting-room and bath en suite. These enormous boats, which are being built in comparatively large numbers to the exclusion of the very fast boat, which once seemed to be the aim for which all steamship lines were competing, show that at prevent the managers of the big transatlantic lines believe that the traveling public prefer comfort and security to discomfort and speed. No matter if the fast boat is just as safe it cannot be as roomy or airy or steady as the slower one—and certainly eight days is fast enough.

New York's Weekly Meat Bill.

New York's weekly meat supply is 10,000,000 pounds of beef, 1,200,000 pounds of lamb and mutton, 1,250,000 pounds of veal and 3,000,000 pounds of pork. An increase of 5 cents in the price of beef alone would mean a tax on New York of $500,000 a week, and the question that is confronting the unfortunate consumer who pays the price is, "What are the packers going to do about it?" Already on the East Side of New York city suffering has begun, and it will extend as the price advances. This is a good time for the vegetarians to make a test case. They will certainly have a number of unwilling parties upon whom they can experiment.

Up to the present writing, none of the Republican poets have been able to raise anything to rhyme with Roosevelt and Fairbanks. We do not need anything to rub up with Parker and Davis.

Swallow and Carroll, the Prohibition candidates for the presidency and vice-presidency, make a ticket somewhat suggestive of an aviary department of a zoological garden.

The presidential candidate of the National Negro Liberty party has been jailed out in Illinois for keeping a disorderly saloon where "rar-zoos were flying in the air."

West Virginia's only objection to the vice-presidential nomination is that the Democrats of that State wanted to make a Governor of the old man.

Dr. Swallow frankly admits that he does not expect to carry his own State, Pennsylvania, and he might have added, no other old State.

Both the leading presidential candidates are good horsemen. It is well. We are going to have a lively race.

The letters of aceptance are expected to nail on a few clapboards where planks are missing in the platforms.

It is a good thing for presidential candidates and steamboat excursionists to know how to swim.

When father-in-law and son-in-law lock horns, then comes the tug of war—in West Virginia.

"And General Miles also ran."—Newport News Press—When, where and what for?

The Virginia crop outlook is equally as encouraging as the political outlook.

Judge Parker is an Episcopalian, and Mr. Davis is a Presbyterian.

MAKERS OF RICHMOND

Brief Sketches of Men Who Have Helped to Make the City.

Sketch No. 18—Series Began June 26, 1904.

Mr. Slaughter William Huff, general manager for the Virginia Passenger and Power Company, has only been a resident of Richmond for two years, but in that time he has become quite widely known, and has extended the local acquaintance formed while a student at Richmond College. While Mr. Huff has spent part of his life in the North and West, he is a Virginian by birth and ancestry, and a devoted son of the old Commonwealth. He is a son of Rev. S. P. Huff and Bettie Jurey Huff. His father was for more than forty years prominent in the work and councils of the Baptist Church. On his father's side his ancestors settled in the Valley of Virginia shortly after the Revolution, and were prominent in the development of that section. On his mother's side he is a great-grandson of Colonel John Slaughter, of the Revolution (from whom he gets his first name), whose numerous descendants have been prominently identified with the material interests of Culpeper and the surrounding counties.

After attending the preparatory schools in the neighborhood of Batesville, Va., Mr. Huff was for one year at Fishburne Military Academy School, Waynesboro, Va.; three years at Richmond College, Richmond, Va., and two years at Cornell University, Ithaca, N. Y. After leaving Richmond College and before entering Cornell University, taught one year in graded schools of Staunton and one year at Miller Manual Labor School, Albemarle county. In order to gain practical experience, he spent one summer vacation while taking a course of electrical engineering at Cornell University in the shops of the Union Railway Company, Twenty-ninth and P Streets, Richmond, Va., filling the various positions from pit hand to armature winder. This was about the time that Sprague turned over his work to the local company, and when the success or failure of electricity as a motive power for street cars was hanging in the balance, and the experiences of the early roads were being watched with the greatest interest.

After completing the electrical engineering course at Cornell, together with some of the post-graduate work, Mr. Huff was appointed assistant superintendent of the Baxter Electric Motor and Manufacturing Company, of Baltimore, one of the pioneer companies in the manufacture of electrical machinery, having first covered the field of electric motors for arc light circuits, and at this time (1891) was entering the field of electric railway motor manufacture. He resigned this position to accept that of general manager of the Raleigh Street Railway Company, Raleigh, N. C.

From this position, he returned to Baltimore, two years later, as general superintendent of the Baxter Company. While holding this position, he was appointed electrical engineer of the Columbia and Maryland Railway Company, a company engaged in the construction of an electric line between Baltimore and Washington. Upon the consolidation of all the street car lines in the city of Baltimore, he was appointed master mechanic of the United Railways and Electric Company, of Baltimore, and was later promoted to the position of electrical and mechanical engineer of the same company. He resigned this position to go to San Francisco as engineer and operating expert for a Baltimore syndicate engaged in the acquiring and consolidation of the San Francisco street railway properties, and was made general manager and acting president of the San Francisco properties as acquired. Upon the completion of the deal and the turning over of the properties by the Baltimore syndicate to New York brokers, he returned to Philadelphia and opened an office for the same syndicate, taking charge of railway construction in territory west of Philadelphia. From this position he came to Richmond in July, 1902, as general manager of the railway department of the Virginia Passenger and Power Company, in charge of its Richmond and Manchester lines. Upon the acquirement of the control of the properties by Mr. Gould, Mr. Huff was made general manager of the company, and his authority extended to the interurban and Petersburg lines, and upon the resignation of Superintendent Trafford authority was extended over the light and power department, as well as all other departments of the Virginia Passenger and Power Company. He has found time from the demands of operation and construction to follow several special lines of original investigation, as will be attested by the patent office records. Chief among these are a series of patents for improvements in railway track bonds, a series for electric street car controllers, and also a series for railway block signalling.

Mr. Huff is a member of the Kappa Alpha (Southern) fraternity, the American Society of Mechanical Engineers, the Lakeside County Club and the Westmoreland Club. He was married while in Raleigh, N. C., to Miss Eva Graham, daughter of Major William A. Graham, of Lincoln county, N. C. Mrs. Huff's mother was Miss Julia Lane, of Amelia county, Va., and her marriage in '63 to Major (then captain) Graham, of the Nineteenth North Carolina Cavalry, was one of the romances of the Civil War.

Mr. and Mrs. Huff, with their three children and Mr. Huff's mother, live at No. 1417 Grove Avenue, and are members of Grove Avenue Baptist Church.

THE EARTH ONE-TWELFTH ALUMINUM.

Metal, Nevertheless, Very Difficult to Obtain—Sapphires and Garnets Compounds of Aluminum—Also Clay—Tablets of Ancients Endure While Books Perish—How Aluminum Is Produced—Diversified Uses.

By G. Frederick Wright, LL. D., F. G. S. A.

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THOUGH aluminum in its various compounds is estimated to form one-twelfth of the earth's crust, the metal itself is very rare and very difficult to obtain. Indeed, it was never separated from its compounds until 1828, and was not produced in sufficient quantities to be of commercial value until 1850. As late as 1883 there were only eighty-three pounds of the metal produced in the United States, but through the processes invented by Charles H. Hall, by the use of whose patents only is the metal now produced in the United States, the annual quantity now made is more than 7,000,000 pounds.

The metal resembles silver in appearance, and may be easily hammered into thin sheets or drawn out into fine wire. Its sonorous qualities make it valuable for bells, but its most remarkable peculiarity is its lightness, its specific gravity being only one-fourth that of silver. This, combined with its strength, the beauty of its color and its freedom from tarnish through oxidation in the air and water, gives it great value in the construction of the framework of instruments which have to be carried from place to place, while as a conductor of electricity it stands so high that it is largely displacing the use of copper for that purpose. The present cost of separating it from its compounds is all that prevents an enormous enlargement of its use.

Before speaking, however, of the growth of this industry and of the uses to which aluminum is put, it will be best to give some account of the various familiar forms in which it appears in combination.

* * *

Several of the compounds of aluminum are among the most valuable precious stones. The sapphire is an oxide of aluminum, occurring in six-sided crystals, and, next to the diamond, is the hardest substance known. In color sapphire ranges from blue to black, blue being the true sapphire color. When having other colors it is known as "Oriental ruby" when red, "Oriental topaz" when yellow, "Oriental emerald" when green, and "Oriental amethyst" when violet. In some of its varieties the sapphire is next to the diamond, the most costly of gems, the red variety being the most highly valued, a single crystal having been known to be sold for $15,000. The largest Oriental ruby brought from China constitutes one of the jewels in the imperial crown of Russia.

The garnet is a compound of silica with alumina; alumina is the oxide of aluminum, iron and manganese. The red variety is much used as a gem, and sometimes single crystals have been valued as high as $700. The best specimens come from Ceylon and Greenland. The poorer class of garnets are coming to be of considerable value, when pulverized, for an abrasive material, to take the place of emery. Four thousand tons of garnets were mined for this purpose in the United States in 1902, averaging in value $35 a ton.

The most valuable, because the most abundant, compound of aluminum is clay. Pure clay is a hydrated silicate of alumina—that is, a chemical combination of the elements composing sand, aluminum, oxygen and water. When pure it is white in color and very plastic, but when heated to redness it becomes solid and forms one of the most permanent materials for artistic and building purposes that are known. Among the most ancient of human arts is pottery, which seems to have been made by almost all prehistoric races. Much of the prehistoric pottery bears the impress of the willow baskets in which it is molded, but much of it is also artificially ornamented, thus bearing an indelible impress of the artistic development of the various prehistoric races.

* * *

One of the most interesting uses to which fine clay has been put is that of furnishing writing material of the most durable kind. Writers of the present time who expect immortality are likely to be disappointed, from the fact that the paper made out of wood pulp, which is now universally used, is extremely perishable. In addition to the fact that it has little strength, it is scarcely ever so freed from chemicals that it will not soon corrode, and besides it furnishes excellent food for book worms. A high authority has recently said that there is not a book printed at the present time which will be legible a hundred years from now. But the clay tablets on which Babylonian schoolboys wrote their copy lessons and worked their sums in arithmetic several thousand years before the Christian era are still as legible as when they were first used. The literary man in those early times needed but a slender equipment to fit himself for the mechanical part of his work. An accessible clay bank would furnish him a plastic material which he could spread into thin plates on which to inscribe his thoughts with a sharp-pointed piece of stick or a piece of bone in as delicate lines as he might wish, which, when baked in the oven, comes as near to immortalizing one's thoughts as is possible by any human device.

* * *

In rainless countries sun-dried brick furnishes a sufficiently substantial material for most building purposes. The adobe houses of Peru, Mexico, and the tablelands of the Rocky Mountain region are easily made and furnish habitations which are both warm in winter and cool in summer. Such are also the ordinary houses in Egypt, where, as in the days of the children of Israel, the better class of sun-dried brick is mixed with straw to give them coherence; while the poorer class is made without any admixture of straw. Bricks of both these classes are still found in vast store-pits made by the Pharaoh that oppressed Israelites. The mounds which are so frequent in Egypt and Babylonia, on which most of the villages are built, have gradually grown through the building of one series of unbaked brick houses upon the ruins of a preceding series.

Burnt brick forms the most important building material in the world. Ordinarily there is iron enough in the clay to give it its familiar red color after burning, thus providing a cheerful hue to the great masses of buildings that are found in modern cities. But in some places, especially in the vicinity of Milwaukee, there is a clay in extensive use which, when burned, has a cream color of very pleasing effect in architecture. The use of brick for building is enormous, and since wood is becoming more and more scarce it is likely to be much greater in the future. In 1902 the value of the brick and tile manufactured in the United States was $98,000,000, which was an increase of $9,000,000 over the preceding year and near double what it was five years before. Ohio and Pennsylvania are by far the largest producers of brick and tile, the former producing $13,730,000 worth, the latter $15,967,000 worth. Next in order comes Illinois, with $9,187,000; New York, $7,484,000; New Jersey, $6,420,000; Missouri, $5,112,000, and Indiana, $4,028,000. California, Colorado, Iowa and Massachusetts produce more than $2,000,000 worth each, while all the other States fall below that amount.

The purer qualities of clay make a fire brick which is very refractory, and is used to line furnaces, and now, on account of their hardness, for street pavements. For ordinary brick almost any clay bank will furnish the material, the mixture of sand and several other materials being of no disadvantage. But the pure material for fire brick is largely found in the beds of shale which underlie seams of coal. In almost all cases the plants which produced the coal beds were rooted in a stratum of mud or clay from which various impurities seem to have been extracted by the plants, so that when it was afterwards transformed into a bed of shale it was of remarkable purity.

* * *

The manufacture of pottery is also attaining an enormous extent in the United States, so that now seventy-three per cent. of the amount used in the country is of domestic make. While the most of this is of the common varieties, the finer qualities, rivaling in beauty that of foreign countries, not excepting China and Japan, are being produced at certain artistic centers, especially at the Rookwood works, at Cincinnati.

The total annual pottery products of the United States are now valued at more than $24,000,000. Of this ornamental terra cotta was valued at $3,500,000. In the production of pottery, as in other forms of clay industry, Ohio leads off with a valuation of $10,600,000, the most of which is produced in the eastern part of the State, bordering upon the Ohio River, especially at East Liverpool, where beds of clay are accessible in the coal measures, and where freights are cheapened by river navigation, much of the clay being brought from Missouri and Arkansas. New Jersey stands next, with an annual production of $4,000,000 worth. Here, again, the great production is facilitated by the occurrence of extensive clay beds, which were deposited in ancient geological ages. Naturally Trenton is the chief center of the industry in New Jersey. No other State produces as much as $2,000,000 worth of pottery.

* * *

The finest quality of clay is known as "kaolin," which is the corruption of the Chinese word kaoling, which designates a high ridge in China, where this material is chiefly obtained. Kaolin is derived from the decomposition of feldspar, one of the prominent constituents of granite, gneiss, porphyry and some other rocks. When in crystalline form in the granite, feldspar can be recognized usually by its gray and flesh-red color. It is composed of silica, alumina and potash. When exposed to the elements the potash and a part of the silica are dissolved out, water in chemical combination taking their place. In certain granitic regions this disintegration takes place to a great depth, so that what appears to be a granite ledge can be shoveled with a spade as easily as an ordinary sand bank. By artificial means the kaolin can be washed out of the mass and obtained in very pure form. But by natural means the material will also be washed away and deposited with more or less impurities in the ponds, lakes and bays into which the streams empty. It is by this latter process that most of our ordinary clay banks have been formed.

While kaolin, or china clay, is found to a great extent in many portions of the United States, nearly $1,000,000 worth is at the present time annually imported to supply our manufacturers with the best quality for their purposes. The importation has increased tenfold within the last twenty years. At the same time that we import $10,000,000 worth of clay products we export but $1,000,000, showing the disadvantage with respect to foreign markets under which our manufacturers labor on account of the high price of wages.

* * *

Passing now directly to the metal itself, of which we have seen that the production in the United States has increased from eighty-three pounds in 1883 to 7,800,000 pounds in 1902, it is interesting to notice the process by which it is obtained and the sources of supply. From the fact that aluminum is so prominent a constituent of clay, and, as we have said, constitutes one-twelfth of the mass of the earth's crust, it would seem that we had at hand a brilliant metal which might be utilized to almost any extent in building purposes, so that our cities could easily be constructed of a metal almost as light as wood, which is perfectly non-combustible, and which would rival in brilliancy the new Jerusalem. But, so far, no cheap process of separating the aluminum in its metallic form from its clayey compounds has been devised, so that its price has not fallen below 30 cents a pound.

As already said, the present patents for the successful extraction of the metal have been taken out by Charles H. Hall, who, without assistance from the scientific schools in whose classes he enrolled himself only five years ago, has devised the processes by which the industry has reached its present high degree of importance. His process consists of subjecting the crude compound from which the aluminum is to be separated to an intense heat, which can be obtained only by the use of a high power of electricity. The Pittsburg Reduction Company, operating these patents, removed some years ago to Niagara Falls, N. Y., where they are availing themselves of the water power of that enormous cataract, 30,000 thousand horse-power is utilized at that point. They have also utilized 5,000 horse-power near Quebec, Can., besides a large amount on the rapids of the St. Lawrence River at Massena, N. Y. At these places the water power is transformed through electricity into heat, and the desired separation of the metal is effected, 4,500 tons of the metal being produced annually, which is more than the output of all the rest of the world.

* * *

In addition to the use of aluminum for the transmission of electric currents and for the construction of parts of machines and apparatus requiring lightness rather than great strength, it is used for making various alloys, with magnesium, zinc, copper and nickel, to form bronzes of various degrees of strength and beauty. It is also used in lithographic work, as a substitute for stone and zinc, and for the manufacture of grindstones and whetstones, with which a keener edge can be given to a blade than with the use of any other material. Strangely enough, also, powdered aluminum when injected into a flame burns with a most intense heat, so that it is used for this purpose for welding rails and for melting metals which do not yield to lesser degrees of heat. At the same time a new explosive of great power has been invented, consisting of 25 per cent. powered aluminum and 75 per cent. of ammonium nitrate.

The raw material from which aluminum is now chiefly produced is know as bauxite, from Les Baux, in France, where it was first obtained. The material, however, is now mined in Georgia, Alabama and Arkansas, where it has been formed very much as kaolin has been (which it resembles in many respects), through the disintegration of granite rocks. Thirty thousand tons of this clay are now anually mined, valued at $128,000. The extent to which the price cost of metals is dependent upon the amount of work in extracting them is in this case illustrated by the fact that out of $128,000 worth of bauxite, $2,238,000 worth of aluminum is extracted.

The chemical combination of aluminum with sulphur and some other compounds forms alum, which is of so much use as a mordant in dying, as an astringent in medicine, and by the bakers to make, out of poor flour, bread as white as would naturally be made out of good flour without the help of any chemical agent.

A few years ago there died in an Ohio town a chemist who professed to have the secret of extracting aluminum from clay by a process so cheap that it could be used as freely as wood. But he died without imparting the secret to any one, and very likely had no valuable secret to impart. But it is evident that immense possibilities lie before inventors of devising cheap processes for separating this valuable metal from the endless clay banks and shale beds which are everywhere to be found, and of thus conferring a boundless favor upon the world in supplying a metal which can in so many ways profitably take the place of wood, which is now so rapidly disappearing from the world. It was said of one of the Roman emperors that he found his capital a city of brick and left it a city of stone. It is by no means improbable that some great inventor may yet have it said of him that he found the cities of the world built of stone, and left them in the light, airy and brilliant structures of aluminum.

HIS ONLY WISH.

Nothing so touches the heart strings as the loss of a favorite child. Anyone who has experienced such a misfortune will sympathize with Mr. N. J. Lewis, of Newberry, Florida, who writes: "I am so thankful that I have found a cure for dysentery. For three years I have been troubled with this disease. Chamberlain's Cholera and Diarrhoea Remedy was recommended to me and has effected a cure. When it comes back one dose is all that is necessary to set me right. I only wish I had known about this remedy a year ago when my dear little baby, one and a half years old, took dysentery and died in three days. The doctors tried to stop it, but failed, and I buried my very heart strings with my child. No household should be without this valuable remedy." For sale by all druggists.

CASTORIA

For Infants and Children.

The Kind You Have Always Bought

Bears the Signature of Chas. H. Fletcher

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When making arrangements to go South, or to send your representatives, in solicitation of your business, 'phone the Seaboard Air Line passenger office (405) to send you one of their interchangeable mileage books—good over nineteen different roads throughout the South. Information in regard to rates, routes and schedules cheerfully furnished. Saves you time, trouble and money.

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WEEK-END EXCURSIONS TO NEW JERSEY SEASHORE RESORTS.

R., F. & P. R. R.

Commencing June 24th and until September 10th, inclusive, the R., F. & P. R. R. will sell on Friday and Saturday of each week, special excursion tickets to Atlantic City, Cape May, Ocean City and Sea Isle City, N. J., at rate of $10 round trip from Richmond. Tickets good going only on date of sale and for return passage leaving destination not later than Tuesday following date of issue. Apply ticket agents R., F. & P. R. R.

W. P. TAYLOR, Traffic Manager.

JULY 15TH IN WORLD'S HISTORY

496 B. C.

Battle of Regillum, in which it is said the twin knights Castor and Pollux appeared upon white horses and assisted the Romans.

238.

Maximus and Balbinus, Emperors of Rome, murdered by the Praetorian guards.

1099.

Jerusalem taken by the Crusaders, on the 39th day of the siege. Two huge movable towers had been constructed and rolled with great labor to the foot of the fortifications. From the tops of these they fought the besieged on even terms till afternoon, when a warrior named Letolde leaped upon the ramparts and was followed by all the other knights and drove the Saracens down into the city. The standard of the Cross was planted in triumph on the walls and after 460 years of bondage, the holy city passed from under the Moslem yoke. The victory thus bravely won, was tarnished by the ferocity of the conquerors. The number who were slain in the city amounted to 70,000 and the Jews were burned in their synagogues.

1557.

Anne of Cleves, one of the Queens of Henry VIII. of England, died. The King demanded her in marriage after having seen her picture. But the painter had flattered the beauty and the King becoming disgusted with what he termed a "Flander's mare," obtained a divorce and sent her home again. She retired, seemingly unconcerned, and no doubt considered it a matter of great good fortune to have escaped with life.

1575.

Henry, Duke of Anjou, divested of the Polish crown, in full diet, and the throne declared vacant.

1610.

The Halve Maan, in which the first white man sailed up the Hudson River, arrived at Amsterdam at her return, having been detained in England since November 7th, of the previous year.

1807.

Joseph McKeen died, an American mathematician and first president of Bowdoin College.

1815.

Bonaparte surrendered himself to Captain Maitland, of the British ship Bellerophon.

1855.

The first legislature of the new State of Panama, formed of the provinces of Panama, Azuen, Veraguos and Chiriqui, met at Panama. Justo Arogemena was appointed Superior Chief.

1863.

The riot in New York continued. The United States troops had arrived; they fired upon the rioters and killed and wounded several hundred of them.

1863.

President Lincoln issues a proclamation appointing the 6th of August as a day for thanksgiving for the recent victories by the Northern armies.